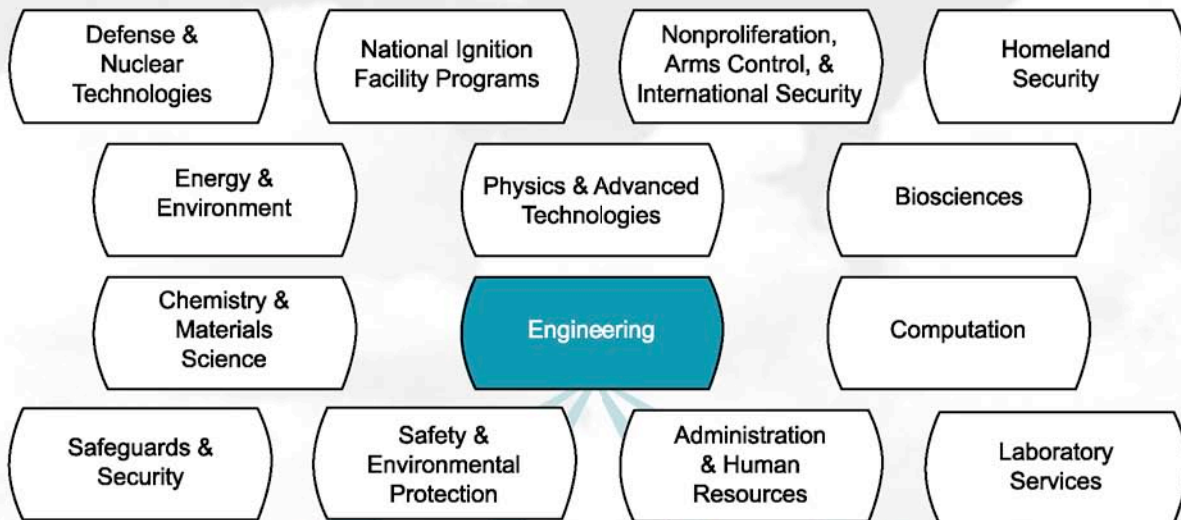


LLNL



## Integrated engineering of large, complex, applied physics systems

- National Ignition Facility
- Nuclear and advanced conventional weapons engineering
- Nuclear materials disposition
- Laser systems engineering
- Isotope separator engineering
- Safety-critical control systems
- Accelerator and particle detector systems engineering
- Field engineering
- Security control systems
- Adaptive optics
- Electronic commerce and concurrent engineering systems

## Large, complex computation modeling and simulation

- Structural, thermal, and fluid system analysis and design
- Nonlinear systems modeling
- Biological systems modeling
- Accelerator and microwave electronics analysis and design
- Antenna modeling
- Nuclear and electromagnetic radiation effects
- Integrated photonics
- Information systems vulnerability analysis and operations
- Transportation vehicles, systems, and infrastructure
- Natural hazards assessment and mitigation

## Microscale engineering

- Precision, brittle material fabrication
- High-precision optics
- High-precision diagnostic instruments
- Miniaturized, integrated analytical biological and chemical systems
- Medical microinstruments and microtools
- Genome sequencing instrumentation
- Optoelectronic communication devices

## Measurement science at extreme dimensionalities

- Real-time data acquisition and processing
- Transient diagnostics
- Remote characterization and detection systems
- Ultralow-power, precision proximity radar
- Adaptive sensors and networks
- Nondestructive evaluation
- Accelerated materials aging
- Biomedical imaging
- Geologic signal processing and analysis
- Subsurface (including underground) imaging
- Environmental monitoring and characterization